



COMPOSE Embarkable Configuration Guide



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Titan Systems Corporation
Solutions Engineering Division
350 Centre Pointe Drive
Virginia Beach, VA 23462
Phone 757 473 9726
Fax 757 671 2533

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Table of Contents

Title	Section
Embarkable Server Installation Deltas	1
Embarkable Server Manual Configuration Deltas	2
Navy Server Manual Configuration Steps	3
Embarkable Workstation Manual Configuration Deltas	4
NAS/DAS Installation and Configuration	5

COMPOSE Embarkable Configuration Guide

COMPOSE Embarkable Overview

The Classified and Unclassified Integrated Shipboard Network System (ISNS) networks provide the backbone for Internet Protocol (IP) communications within the ship and access to resources located beyond the lifelines. As units of the United States Marine Corp (USMC) and Carrier Air Wings embark naval vessels, they utilize the ISNS network and Pre-Positioned Servers (PPS) to perform their mission. Like the ISNS server used by the Navy domain, the Embarkable servers are loaded with the Common PC Operating System Environment (COMPOSE) as a Program of Record (POR) baseline. This guide provides procedures for loading and configuring the Embarkable domain to operate in consort with the Navy domain to provide functionality for users of both domains.

This document, the COMPOSE Embarkable Configuration Guide (ECG), conforms to the requirements outlined in the *Commander Fleet Forces Command's Policies and Procedures for Afloat Landing Force Network Operations* message, dated May 2004. Additionally, since many of the workstations used by embarked personnel include Navy Marine Corps Intranet (NMCI) clients, the ECG limits modifications to those clients to avoid costs associated with reconnecting them to the NMCI cloud as they disembark.

The installation of COMPOSE on an Embarkable domain is slightly different from the installation on a Navy domain but many of the procedures are the same. The ECG, does not repeat the entire set of procedures already outlined in the COMPOSE Installation and Configuration Guide (I&CG) for Navy servers but only describes the 'deltas' or differences between the two types of installations. Where applicable, the ECG refers to the existing I&CG to help the installer locate where the embarkable steps fit into the 'main procedural flow'. The ECG may provide the final 'delta' screenshots without accompanying preliminary screenshots when the steps leading to the final screenshots are intuitive to the installer.

The ECG also highlights configuration steps that may be different for the legacy IP addressing scheme and the new Increment 1 IP addressing scheme that is deployed with Alcatel 7700 switches. The new IP addressing scheme relies on supernetting Class C network addresses to provide an aggregation of networks listed as a single network address and mask instead of multiple Class C network addresses using the default subnet mask. This change greatly increases the number of available host addresses without requiring additional Class C address resources. To further improve efficiency, the Increment 1 addressing scheme also uses subnetting to divide a single Class C network address into multiple broadcast domains for servers, network management systems, Subsystem Interface List (SSIL) systems, tactical systems, and to establish a DMZ for each off-ship router interface.

The installer should use the COMPOSE Embarkable Load Plan that accompanies this document to know when to implement the baseline installation and configuration procedures and when to implement the 'deltas' that pertain to embarkable units. The Load Plan provides details needed to install and configure Embarkable servers from beginning to end. It also provides steps to configure the non-COMPOSE embarkable workstations to function in an ISNS network as well as install and configure COMPOSE workstations for use by the embarkable units.

It is important to note that an Embarkable COMPOSE installation does not include the installation of Enterprise White Pages (EWP) Exchange Export. The afloat connection to the Navy Global Directory Service (NGDS) is not authorized for installation on Embarkable domains. It is only authorized for the Navy domain and is not installed to keep NMCI users from being listed in the NGDS twice; once with the attributes associated with the NMCI directory and once again with the attributes from the shipboard COMPOSE directory.

The ECG document consists of a suite of five separate sections: the “COMPOSE Embarkable Server Installation Deltas”, the “COMPOSE Embarkable Server Manual Configuration Deltas”, the “COMPOSE Navy Server Manual Configuration Steps”, the “Embarkable Workstation Manual Configuration Deltas” and the “Network Attached Storage/Direct Attached Storage (NAS/DAS) Installation and Configuration”. The “Embarkable Server Installation Deltas” describe what the installer needs to do during the Baseline Configuration Module (BCM), Domain Configuration Module (DCM) and Core Services Installation Module (CSIM) for an Embarkable installation. The “Embarkable Server Manual Configuration Deltas” describe how the System Administrator must configure Embarkable servers after completing the initial Windows 2000 O/S and COMPOSE software installation. The “Navy Server Manual Configuration Steps” describe how the System Administrator must configure the Navy servers to accommodate the Embarkable servers and workstations. The “Embarkable Workstation Manual Configuration Deltas” describe how to configure both COMPOSE workstations and non-COMPOSE workstations to function in the ISNS network.

The “Network Attached Storage/Direct Attached Storage (NAS/DAS) Installation and Configuration” describes how to install and configure the file server that comes onboard to provide additional hard drive space. The NAS/DAS provides a centralized solution for moving user data between the NMCI cloud and the shipboard network; without it each user would be responsible for moving his or her own data and mailbox. Each of these COMPOSE ECG sections reside in separate files located on the COMPOSE ECG CD. This storage solution is applicable to Air Wing Embarkable installations only and does not apply to the Marine embarkable installations.

The COMPOSE ECG includes information for both the Marine and the Air Wing Embarkable installations. This guide does not have separate sections for each of the embarkable units, but it spells out differences between the Marine and Air Wing procedures where applicable. The following tables list the ‘Deltas’ for Embarkable COMPOSE server and workstation installation and configurations. Unlike the Embarkable Load Plan which lists the steps already described in the I&CG as well as steps described in the ECG, these tables highlight the differences from the Navy COMPOSE installs. These tables also provide a quick overview of how the Marine and Air Wing COMPOSE installs are different from each other and point out where to find the detailed instructions in the COMPOSE ECG.

Each of the following tables corresponds to the four major sections of an Embarkable COMPOSE server and workstation installation and configuration. The corresponding Microsoft WORD filename is listed in the shaded row. The NAS/DAS section is not included since it is an entirely separate set of instructions from the COMPOSE install.

Table 1 – Embarkable Server Installation ‘Deltas’

Embarkable Procedure	USMC	Air Wing	Section Number
Filename : “1_EB Server Installation Deltas.doc”			
BCM	<ul style="list-style-type: none"> • Computer name – insert “M” for Marines • TCP/IP Properties – point to USMC DNS, USMC WINS, USMC FQDN; append DNS suffixes to include USMC and Navy FQDNs, with USMC FQDN listed first 	<ul style="list-style-type: none"> • Computer name – insert “A” for Air Wing • TCP/IP Properties – point to Air Wing DNS, Air Wing WINS, Air Wing FQDN; append DNS suffixes to include Air Wing and Navy FQDNs, with Air Wing listed first 	<ul style="list-style-type: none"> • Section 1.1.1 • Section 1.1.2
DCM	<ul style="list-style-type: none"> • Edit Owning Dept – Add EB dept code for Embarkable • Edit Server Naming Prefix – add “M” for Marines • Edit FQDN - <shipname>m.usmc.(s)mil • Edit Server list to correct IP addresses • Select Not Installed for Dynamic Host Configuration Protocol (DHCP) Server • Install Post-COMPOSE v2.0.3 additional software and required patches (e.g., Security Patch Rollup, C3PO, NTCSS and IAVA Patch) • Perform manual workarounds for COMPOSE v2.0.3 NCR’s 	<ul style="list-style-type: none"> • Edit Owning Dept – Add EB dept code for Embarkable • Edit Server Naming Prefix – add “A” for Air Wing • Edit FQDN – airwing.navy.(s)mil • Edit Server list to correct IP addresses • Select Not Installed for DHCP Server • Select Not Installed for ISA Server • Install Post-COMPOSE v2.0.3 additional software and required patches (e.g., Security Patch Rollup, C3PO, NTCSS and IAVA Patch) • Perform manual workarounds for COMPOSE v2.0.3 NCR’s 	<ul style="list-style-type: none"> • Section 1.2, Table 3 • Section 1.2, Table 4 • Section 1.2, Table 5 • Section 1.2, Table 7 • Section 1.2, Table 8 • Section 1.2, Table 9 • Section 1.2, Table 11 • Section 1.2, Table 12

Table 1 – Embarkable Server Installation ‘Deltas’ (continued)

Embarkable Procedure	USMC	Air Wing	Section Number
Filename : “1_EB Server Installation Deltas.doc”			
CSIM	<ul style="list-style-type: none"> • Configure the “COMPOSE Application Package Role” for “Workstation Only” • Create “USMC Server Application Package” Role • Configure the “PKI Role” for “All Platforms” • Add Office 2000 Professional , “USMC Server Application Package” and “PKI Role” to “COMPOSE Default Server Role” 	<ul style="list-style-type: none"> • No change to default CSIM roles 	<ul style="list-style-type: none"> • Section 1.3, Table 13 • Section 1.3, Table 14 • Section 1.3, Table 15 • Section 1.3, Table 16

Table 2 - Embarkable Server Manual Configuration 'Deltas'

Embarkable Procedure	USMC	Air Wing	Section Number
Filename: "2_EB Server Manual Configuration Deltas.doc"			
Configure Exchange Server	<ul style="list-style-type: none"> • Configure alternate email domain name • Create new "off-ship" SMTP connector to forward USMC email to Navy Operations Center (NOC) with a 'cost' of 10 • Create new "intra-ship" SMTP connector to forward USMC mail to Navy Exchange server with a 'cost' of 1 • Restart Default SMTP Virtual Server 	<ul style="list-style-type: none"> • Configure alternate email domain name • Create new "off-ship" SMTP connector to forward ALL Air Wing email to Navy Exchange server with a 'cost' of 1 (<i>since intra-ship SMTP connector not needed</i>) • Do NOT create intra-ship connector. Not needed. • Restart Default SMTP Virtual Server 	<ul style="list-style-type: none"> • Section 2.1.2 • Section 2.1.3.1 • Section 2.1.3.2 • Section 2.1.3.3
Configure DNS Server	<ul style="list-style-type: none"> • Configure USMC forward lookup zone(s), zone transfer properties • USMC users point to USMC ISA Server. No need to change anything • Create secondary forward zone for the Navy domain name • Create secondary forward zone for any alternate Navy email domains • Create AD integrated forward zone to support alternate Embarkable email domain(s) • Add Exchange Server host record and MX record with 'priority' of 10 to newly created AD zone(s) • Configure zone transfer properties on newly created AD integrated zone(s) 	<ul style="list-style-type: none"> • Configure Air Wing forward lookup zone(s), zone transfer properties • Delete "isaserver" CNAME so since Air Wing users point to Navy ISA Server • Create secondary forward zone for the Navy domain name • Create secondary forward zone for any alternate Navy email domains • Create AD integrated forward zone to support alternate Embarkable email domain(s) • Add Exchange Server host record and MX record with 'priority' of 10 to newly created AD zone(s) • Configure zone transfer properties on newly created AD integrated zone(s) 	<ul style="list-style-type: none"> • Section 2.4.1 • Section 2.4.1 • Section 2.4.2 • Section 2.4.2 • Section 2.4.3 • Section 2.4.3 • Section 2.4.4

Table 2 – Embarkable Server Manual Configuration ‘Deltas’ (continued)

Embarkable Procedure	USMC	Air Wing	Section Number
Filename: “2_ EB Server Manual Configuration Deltas.doc”			
Configure DNS Server	<ul style="list-style-type: none"> Manually enter pointer records for Navy servers, GCCS hosts (GENSER) and critical Navy workstations in reverse lookup zone 	<ul style="list-style-type: none"> Manually enter pointer records for Navy servers, GCCS hosts (GENSER) and critical Navy workstations in reverse lookup zone 	<ul style="list-style-type: none"> Section 2.4.5
Configure Active Directory	<ul style="list-style-type: none"> Configure “number of previous logons to cache” to 10 instead of zero 	<ul style="list-style-type: none"> Keep default COMPOSE domain policy. No change. 	<ul style="list-style-type: none"> Section 2.5.2
Configure ISA Server – manual step for Increment 1 IP addressing scheme on ships using COMPOSE 2.0.3	<ul style="list-style-type: none"> Manually edit Local Address Table (LAT) to include entire supernet range of multiple class C addresses 	<ul style="list-style-type: none"> ISA Server not installed on Air Wing servers. 	<ul style="list-style-type: none"> Section 2.6.2
Establish WINS Replication	<ul style="list-style-type: none"> Add Navy WINS server as push/pull replication partner 	<ul style="list-style-type: none"> Add Navy WINS server as push/pull replication partner 	<ul style="list-style-type: none"> Section 2.9
Establish the Trust Relationship	<ul style="list-style-type: none"> Configure two one-way trusts between USMC and Navy domains 	<ul style="list-style-type: none"> Configure two one-way trusts between Air Wing and Navy domains 	<ul style="list-style-type: none"> Section 2.10
Create Postmaster Group and Email Account	<ul style="list-style-type: none"> Create Postmaster Distro Group 	<ul style="list-style-type: none"> Create Postmaster Distro Group 	<ul style="list-style-type: none"> Section 2.11

Table 3 – Navy Server Manual Configuration Steps

Embarkable Procedure	USMC	Air Wing	Section Number
Filename : “3_Navy Server Manual Configurations.doc”			
DHCP Server – manual step for Increment 1 IP addressing scheme on ships using COMPOSE 2.0.3	<ul style="list-style-type: none"> • Reconfigure DHCP server scopes to accommodate new IP addressing scheme 	<ul style="list-style-type: none"> • Reconfigure DHCP server scopes to accommodate new IP addressing scheme 	<ul style="list-style-type: none"> • Manually completed before embarkable servers come onboard
DHCP Server – manual step to accommodate legacy networks	<ul style="list-style-type: none"> • Ensure USMC server IP addresses excluded 	<ul style="list-style-type: none"> • Ensure Air Wing server IP addresses excluded 	<ul style="list-style-type: none"> • Manually completed before embarkable servers come onboard
Configure TCP/IP Properties	<ul style="list-style-type: none"> • TCP/IP Properties – append DNS suffixes to include USMC and Navy FQDNs 	<ul style="list-style-type: none"> • TCP/IP Properties – append DNS suffixes to include Air Wing and Navy FQDNs 	<ul style="list-style-type: none"> • Section 3.1
Configure DNS Server	<ul style="list-style-type: none"> • Configure Navy forward lookup zone(s), zone transfer properties • Create secondary forward zone for the Navy domain name and alternate Navy email domains • Manually enter pointer records for Embarkable servers 	<ul style="list-style-type: none"> • Configure Navy forward lookup zone(s), zone transfer properties • Create secondary forward zone for the Navy domain name and alternate Navy email domains • Manually enter pointer records for Embarkable servers 	<ul style="list-style-type: none"> • Section 3.2, table 2 • Section 3.2, table 3 • Section 3.2, table 4
Configure Exchange Server	<ul style="list-style-type: none"> • Create new “intra-ship” SMTP connector to forward USMC email to USMC Exchange server with a ‘cost’ of 1 • Restart Default SMTP Virtual Server 	<ul style="list-style-type: none"> • Create new “intra-ship” SMTP connector to forward Air Wing email to Air Wing Exchange server with a ‘cost’ of 1 • Restart Default SMTP Virtual Server 	<ul style="list-style-type: none"> • Section 3.3, table 5 • Section 3.3, table 6
Establish WINS Replication	<ul style="list-style-type: none"> • Add Navy WINS server as push/pull replication partner 	<ul style="list-style-type: none"> • Add Navy WINS server as push/pull replication partner 	<ul style="list-style-type: none"> • Section 3.4
Establish the Trust Relationship	<ul style="list-style-type: none"> • Configure two one-way trusts between USMC and Navy domains 	<ul style="list-style-type: none"> • Configure two one-way trusts between Air Wing and Navy domains 	<ul style="list-style-type: none"> • Section 3.5

Table 3 - Navy Server Manual Configuration Steps (continued)

Embarkable Procedure	USMC	Air Wing	Section Number
Filename : “3_Navy Server Manual Configurations.doc”			
Configure ISA Server – future and legacy networks		<ul style="list-style-type: none"> • Add Air Wing web groups to Navy ISA server 	<ul style="list-style-type: none"> • Section 3.6
Configure ISA Server – manual step for Increment 1 IP addressing scheme on ships using COMPOSE 2.0.3	<ul style="list-style-type: none"> • No change to Navy ISA Server 	<ul style="list-style-type: none"> • Manually edit Local Address Table (LAT) to accommodate new IP addressing scheme 	<ul style="list-style-type: none"> • Manually completed before embarkable servers come onboard

Table 4 – Workstation Manual Configuration ‘Deltas’

Embarkable Procedure	USMC	Air Wing	Section Number
Filename : “4_EB Workstation Manual Configuration Deltas.doc”			
BCM	<ul style="list-style-type: none"> • TCP/IP Properties – point to USMC DNS, USMC WINS, USMC FQDN; append DNS suffixes to include USMC and Navy FQDNs, with USMC FQDN listed first 	<ul style="list-style-type: none"> • TCP/IP Properties – point to Air Wing DNS, Air Wing WINS, Air Wing FQDN; append DNS suffixes to include Air Wing and Navy FQDNs, with Air Wing listed first 	<ul style="list-style-type: none"> • Section 4.1
Configure Symantec Client	<ul style="list-style-type: none"> • Copy GRC.dat file from USMC LUServer 	<ul style="list-style-type: none"> • Copy GRC.dat file from Air Wing LUServer 	<ul style="list-style-type: none"> • Section 4.2

Marine Embarkable Unit Considerations and Configuration

Since Spawar provides the Pre-Positioned Servers for the Marines to utilize as their Marine Windows 2000 servers onboard the Navy ship, these servers are installed and configured with COMPOSE software prior to Marine embarkation. The ECG describes the step-by-step process to install Marine Servers with the Microsoft Windows 2000 Operating System and COMPOSE software. It also shows how to configure non-COMPOSE workstations to function in the COMPOSE network. This document does not describe the case where Marine embarking staff or units bring onboard their own servers.

Although the Marine COMPOSE server installation and configuration is similar to the one for the Navy COMPOSE servers, important differences do exist. The ECG outlines the Embarkable server requirements that are unique from the COMPOSE I&CG. These differences include changes to the BCM, DCM and CSIM. It also includes manual configuration changes to the Domain Name System (DNS), Active Directory (AD), Internet Security and Acceleration (ISA) Server, Windows Internet Naming Server (WINS), and Exchange Server. It outlines specific actions that the Navy System Administrator must perform on Navy COMPOSE servers to accommodate the Marine COMPOSE servers such as manual configuration changes to the DNS, AD, WINS and Exchange Server. This document also addresses how to establish two one-way trust relationships between the Marine and the Navy domains.

Air Wing Embarkable Unit Considerations and Configuration

Just like the Marine Embarkable servers, the Air Wing servers used onboard Navy ships are installed and configured with Windows 2000 Operating System (O/S) and the COMPOSE software prior to Air Wing embarkation. The ECG describes the step-by-step process to install COMPOSE Air Wing Servers with the Microsoft Windows 2000 Operating System and COMPOSE software and how to configure the Air Wing workstations to function in the COMPOSE network. This document does not describe the case where the Air Wing embarking staff brings their own servers onboard.

Although the Air Wing Embarkable COMPOSE installation and configuration is similar to the Marine Embarkable COMPOSE installation and configuration, important differences do exist. Unlike the Marine installations, Air Wing PPS installations are Unclassified only. SIPRNET Air Wing users must have accounts on the Navy's COMPOSE domain. The installer should not install the ISA Server on COMPOSE Air Wing Servers. Also, the Air Wing's Exchange server does not have SMTP access on the router and therefore forwards all mail to the Navy Exchange Server instead of the Navy Network Operations Center (NOC). Unlike the Marines, the Air Wing does not require the addition of software to the baseline COMPOSE software install list. Finally, Air Wing Embarkable installations employ the NAS/DAS storage solution and the Marine embarkable installations do not.